

## Koch, Kristine

---

**From:** Koch, Kristine  
**Sent:** Tuesday, November 04, 2014 1:41 PM  
**To:** John Toll  
**Subject:** RE: Manganese memo  
**Attachments:** Mn ACRs from MATC calculations 110314.xlsx

John,  
Burt has reviewed the memo and there is still a small problem with the final acute-chronic ratio. It seems that Windward fixed some but not all of the ACRs. The attached spreadsheet is the correct derivation for the final ACR (= 5.267) as opposed to the final ACR = 4.947 in your October 29, 2014 draft memo. Although this is not a huge change, given the scrutiny ODEQ's water program and others are likely to give this it needs to be corrected.

What specifically needs to be corrected is calculating the ACR as the acute value by the MATC, not dividing the ACR by the EC20 as Windward did in some but not all cases. The MATC is the geometric mean of the chronic value and the chronic NOEC, where the chronic value could be a LOEC, EC20 or IC25, depending on what information and statistical tests or statistical data reduction is available in the individual studies reviewed.

Please include these revisions in the memo and resubmit for final approval.

Thanks,

Kristine Koch  
Remedial Project Manager  
USEPA, Office of Environmental Cleanup

U. S. Environmental Protection Agency  
Region 10  
1200 Sixth Avenue, Suite 900, M/S ECL-115  
Seattle, Washington 98101-3140

(206)553-6705  
(206)553-0124 (fax)  
1-800-424-4372 extension 6705 (M-F, 8-4 Pacific Time, only)

---

**From:** John Toll [mailto:JohnT@windwardenv.com]  
**Sent:** Wednesday, October 29, 2014 4:31 PM  
**To:** Koch, Kristine  
**Cc:** Shephard, Burt; Sheldrake, Sean; James McKenna; Bob Wyatt (rjw@nwnatural.com); Jennifer Worenets (jworonets@anchorqea.com); David DeForest  
**Subject:** Manganese memo

Hi Kristine. As you know we've been working with Burt Shephard over the past week or so to answer EPA's questions and incorporate its recommendations into the memo "Derivation of Proposed Manganese PRG to Replace the Suter and Tsao (1996) Tier II Value in the Portland Harbor Feasibility Study." We addressed the questions, incorporated the recommendations, and discussed the revisions with Burt before resubmitting the memo. Having finished that peer review process, the revised manganese memo is attached for your review.

Best regards,

John

John Toll, Ph.D.  
Partner, Windward Environmental LLC  
200 West Mercer Street, Suite 401 | Seattle, WA 98119  
206.812.5433 (o) | 206.913.3292 (c)  
[john.toll@windwardenv.com](mailto:john.toll@windwardenv.com) | [www.windwardenv.com](http://www.windwardenv.com)